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NEW DEVELOPMENTS IN THE GDR ELECTRICAL, PRECISION INSTRUMENT, AND OPTICAL INDUSTRIES

Enterprises of the VVB RFT (Federation of People-Owned Enterprises for Radio and Telecommunications) exhibited the most up-to-date measuring instruments at the Leipzig Spring Fair, e.g., a Universal portable measuring device for use in the communications field.

The Messphysik Dr Sorensen, Ltd., firm in Zernsdorf near Berlin, exhibited a newly developed impulse oscillograph with nine loops, which is capable of recording frequencies of up to 15,000 cycles per second and an amplitude of 20 millimeters.

The SAG (Soviet Corporation) Treptow Electrical Apparatus Plant exhibited a new measuring device which operates with a core magnet weighing 220 grams, whereas the horseshoe magnet formerly used with this device weighed 2,500 grams. This firm also exhibited a new cam switch with a switching speed five to ten times greater than that formerly used. Until now, great difficulties have been encountered in the GDR in the construction of large crane installations because of a lack of switches of the above-mentioned type. Another new development of this plant is a six-anode pumpless iron rectifier for rolling mills and streetcars, and for use in electrolytic processes. Serial production of current meters, especially for home use, has been started at the plant.

The people-owned Technical-Physical Workshop in Thalheim/Erzgebirge has developed a regulating transformer which will be heat-resistant and which is supposed to allow continuous regulation without loss of power. Also on exhibit was a new metal-locating instrument to be used for finding metal splinters. Another new development is a speed analyzer for measuring the incidence of individual sound frequencies. A newly designed electrostatic voltmeter will allow accurate measurement of currents of up to 300,000 volts.

In the field of auxiliary broadcasting equipment, the VVB RFT exhibited a new type of dynamic reporter microphone which operates without its own power supply with a permanent magnet. Also on exhibit were two magnetic tape recorders.

In the field of radio and signal instruments, the VVB RFT has developed a combination emergency transmitting and receiving apparatus for ships, and a direction finder with a loop for locating the position of ocean-going ships. Also developed was a new flat sonic depth finder and a so-called "Fischlupe" (fish locator lens) for the fishing industry.

The Berlin Incandescent Lamp Factory exhibited a number of light-bulb machines suitable for producing base, mount, and socket for a light bulb in one operation. With these machines, 20 workers can produce 1,200 light bulbs per hour. The factory also exhibited a coiling machine which coils tungsten wire of 10 μ into single and double coils.

The VVB RFT exhibited a newly developed RFT pole-type loud-speaker to be used in public address systems at mass meetings.

Another new product developed by the people-owned Gaselan Factory (formerly Pintsch), Berlin, was a track diagram with relay-type switch control unit which serves to operate switches and signals and increase safety in train runs and marshaling operations.

In the radio industry field, various new designs in receiver construction were shown. Among them was the RFT Superhet 4 U 65, an AC/DC receiver, with push-button wave-band switches. This set is equipped with four tubes, including the rectifier, and it has six tuning circuits and five wave-bands, including one for ultrashort wave. This set was to go into serial production in the fourth quarter 1951, and to be sold for less than 200 Deutsche marks (East). The Stassfurt RFT Plant showed a small console set which is to sell at 1,500 to 1,600 Deutsche marks (East). The Berlin Oberspreewerke exhibited a television set for home reception and an ultrashort-wave transmitter. The C. Lorenz Corporation, now under trusteeship, exhibited a newly developed induction-heating oscillator (Gluehsender) for metal hardening and vacuum technology.

The VEM (Federation of People-Owned Enterprises for Electrical Machinery and Equipment) exhibited electric motors of various sizes, from 0.125 to 1,000 kilowatts. One 6,000-volt high-tension motor was earmarked for use in a briquette press. Another innovation shown was fire-damp and explosion-proof electric motors, production of which was started in the beginning of 1951; these motors are supposed to help overcome the bottleneck which has existed up to now in the mining industry.

The TRO (Oberschoeneweide Transformer Plant) exhibited various new types of high-voltage equipment, among them a complete power plant high-voltage system (Hochspannungsfeld) for 110,000 volts, equipped with a pressure-gas switch CPF-2501-110/600. Models were on exhibit of a 170-ton, 100 million volt-ampere, mobile transformer (Wandertransformator) and of a 100 million volt-ampere mobile regulator (Wanderregler). Furthermore, the plant exhibited air compressors, disconnecting switches, over-voltage protector equipment, fuses, and current and voltage transformers.

The following information is known regarding developments of individual plants of the GDR electrical industry.

Development of a new high-voltage motor, 3,000 volts, up to 160 kilowatts, at the Wernigerode Electric Motor Plant. Serial production is to start in 1951. Serial production of 14- to 250-kilowatt motors has started already.

The people-owned Berlin Motor Works, Berlin-Weissensee, has developed enclosed three-phase AC motors with external cooling. The housings of these motors are completely enclosed and have cooling fins.

The people-owned Agil Plant, Berlin-Oberschoeneweide, has developed 12 new types of electrodes, among them a deep-welding electrode (Tiefeinbrandelektrode) and a resistance-welding electrode. Production of electrode types 16 and 18, which are produced from domestic raw materials, will go a long way toward making the GDR independent of electrode imports.

Welding under flux (Schweissen unter Pulver), which had been done on a trial basis at the Kjellberg Electrode and Machinery Plant, Ltd., in Finsterwalde, has now been approved for use in the GDR. It is said to achieve substantially quicker welding by the use of higher voltage current. The Kjellberg firm has developed semiautomatic and fully automatic equipment suitable for this process.

The people-owned Rectifier and Transformer Plant, Reichenbach/Vogtland, which until recently produced only welding transformers, has now developed a new welding rectifier. This rectifier will make it possible to process scrap into electrodes. Furthermore, by elimination of the rotary converter, materials in short supply, such as dynamo sheet, copper wire, and ball bearings, will be saved. The new device can be marketed at about 70-75 percent of the price of the welding rectifier formerly sold.

The VVB EKM (Federation of People-Owned Enterprises for the Construction of Power Machinery and Motors) Turbine Plant, Meissen, has produced the first remote-controlled water turbine in the GDR. It is one of the two turbines which are to go into a hydroelectric turbine set in Dresden. The capacity of the two turbines is 1.2 million kilowatt-hours annually. This plant also produced a Kaplan experimental turbine with a 75-horsepower capacity.

The Bautzen EKM Plant produces grate stokers and conveying machinery.

The VVB EKM developed a small power plant for light and power supply on inland and ocean-going ships and for industry. The VEM AC generator is driven by a vertical, double-acting, two-cylinder, uniflow, enclosed (Kapsel) steam engine with a continuous 200-horsepower capacity. The weight of the whole aggregate is 2,000 kilograms.

At present, a new repair plant for transformers and power machinery is under construction in Erfurt. The plant is to be in full operation by 1 October 1951. It will then be the largest plant of its kind in the GDR, employing 400 workers. It will the first plant in the GDR to be equipped with a testing pit (Schleudergrube) for testing large shafts, the kind used in large power plant machinery. The main part of this new installation, which was designed by the Leipzig branch of the VVB Industrie Entwurf (Industrial Design) and is being built by the Leipzig Bau-Union, is a three-bayed main hall of reinforced concrete, 102 meters long, 35 meters wide, and 14 meters high in the center. Machines weighing up to 60 tons can be mounted in this hall. The building site covers an area of 7,000 square meters. With the aid of this plant, repair work on machines and equipment for large power plants will be carried out more speedily.

The VVB IKA (Federation of People-Owned Enterprises for Fixtures, Cable, and Equipment) Cable Plant, Meissen, produced the first telephone cable with its newly installed lead press in February 1951. This cable was exhibited at the Leipzig Spring Fair as a new product of this firm. This plant is the only GDR plant to establish a basis for the continuous supply of telephone cable in the GDR.

The key plant for the production of X-ray equipment in the GDR is the VEM Transformer and X-Ray Plant, Dresden. Within the last 5 years, X-ray equipment for medical use, X-ray apparatus for material testing, and X-ray equipment for precision structure examinations have been developed and electromedical apparatus has been built. Within the framework of the Five-Year Plan, plant output is to be more than doubled in quantity and value of products.

By a decision of the Ministry of Machine Building, the Oberspree Equipment-Building Plant has been merged with the TRO. Thus, the Oberspree plant has also become a key plant. The Oberspree Equipment-Building Plant produces acetylene generators and transformer housings. It is expected that delivery of transformer housings to the TRO will be speeded up and production increased, as a result of the merger.

The RFT Berlin Incandescent Lamp Factory (formerly Osram) supplied the special ray bulbs to be used for infrared equipment produced for the first time in the GDR by the VVB RFT.

The RFT Bautzen Telecommunications Plant has developed telecommunications equipment for use in the tropics, production of which has already been started.

The SAG Magdeburg Apparatus Plant (formerly Schaeffer & Budenberg) came out with a new speedometer under the trade name "Speedometer." It consists of a small AC generator which is fed by the same motor whose number of revolutions is to be measured. This device is of special importance in connection with remote controls for fully automatic operation in hydro [electric] plants, etc.

Precision Instrument and Optical Industry

The people-owned Carl Zeiss Plant, Jena, exhibited at the Leipzig Spring Fair for the first time in 10 years a newly developed interference computing recording comparator. At present, the Zeiss plant is the only producer in the GDR of this especially valuable measuring instrument, with which measurements up to 0.03 micron can be made. By means of a vacuum, the measurements are kept from being influenced by the measuring-room temperature. Absolute measurements are made with the aid of light rays from the krypton or helium spectrum. The completely enclosed construction guarantees constant temperature and makes the apparatus dustproof and airtight.

Other instruments exhibited in Leipzig by the Zeiss plant were a spectro-projector, a "Komimeter" a transit, a clock mechanism for astrographs, a new surgical microscope, and a colposcope. A slit-lighting instrument (Spaltleuchtengeraet) with microscope-cytoplast and fundus observation combined with a lens microscope was developed for use in the field of ophthalmology. Another new product shown was a coincidence refractometer for eye examinations.

In the field of photography, a flectometer (Flektometer) was shown to be used as a substitute for a flectoscope (Flektoskop) (a reflex viewfinder accessory for the Contax camera). Also shown was a Biometer 2.8 with 80-millimeter focal length, and a redesigned "Magnar" accessory for the Rolleiflex camera.

A spectroprojector has been further developed to be used for metal analyses in the chemical and metallurgical industries, and also a quartz spectograph "Qu 24," which is needed in the metallurgical industry for spectroanalytical examinations. The Zeiss plant also exhibited a projection-optometer; a new telescope, type 80/1200-millimeter; and a 300-millimeter reflex "Ceclostat," with a clock mechanism, to be used for solar observation.

The people-owned Schott and Associates Plant, Jena, a sister plant of Zeiss, exhibited a continuously operating large apparatus for the chemical industry and a telescope mirror 1.2 meters in diameter and weighing 650 kilograms.

The people-owned Rathenow Optical Plant exhibited a new polarization microscope, patterned after the design by Professor Leutwein, and a camera microscope "Superphot," which is a microscope with a built-in polarization instrument.

The Liebenwerda Measuring and Drafting Instrument Plant exhibited a daylight developing machine for design blueprints and a new-type heliographic printing machine. The VEB Medizintechnik (Medical Technology) showed an improved version of an electrode unit, "Unident."

At the Prague Sample Fair in April 1951, several products were exhibited by GDR precision and optical plants. VEB Askania, Teltow, showed a newly designed control unit (Reglerrelz); VEB Junkalor, Dessau, a CO_2-printer for fluegas analysis which works on an absorption basis for potash lye. Also on exhibit was the newly developed track diagram control unit of the VEB Gaselan.

The precision instrument and optical industry is to increase production considerably under the Five-Year Plan; its 1955 output is to be 239 percent above its 1950 output. A great part of this production is destined for export. According to GDR newspapers, the inquiries received from the Eastern bloc countries are so numerous that it will hardly be possible for the GDR industry to meet all demands. It is especially in the field of precision and optical instruments that the present production of Eastern bloc countries is insufficient to meet their requirements. Obviously, the GDR, which has the most highly developed production in this field of any country in the Soviet sphere, will have the task of filling this gap.

In July 1949, the DAMG (German Office for Weights and Measures) was charged by the German Economic Commission with the inspection and supervision of measuring instruments, with the aim of achieving improved quality in production. As a result of World War II, the number of serviceable measuring instruments was greatly reduced, and the remaining instruments have become inefficient because of overuse. The greatest shortage is in high-quality special measuring instruments. The DAMG has at its disposal laboratories in Berlin, Weida, and Ilmenau, and testing stations in Berlin, Weida, Ilmenau, Magdeburg, and Dresden. Here the quality of all the measuring instruments produced is being tested; these include all electrical measuring instruments for chemicals and dairy products, all types of clocks, and all kinds of temperature measuring instruments and special measuring instruments for medical, optical, and chemical use.

The following information is known on developments at individual plants of the precision instruments and optical industry:

Within the framework of the reorganization of people-owned enterprises, the following plants were centralized under the Glashuette (Glass Foundry): Urofa, Lange & Sons, Feintechnik, (Precision Technology), Masstechnik (Measuring Technology), Praezision, Kstler, and the Makarenko training establishment. The combined plants employ about 1,000 workers and produce mainly timing mechanisms. The plants are managed by national prize winner Karl Fitscha.

The Richard Kneuthe Precision Instrument Factory in Limbach-Oberfrohna has developed a new type of conical and universal precision measuring instrument (Kegel- und Universalfeinmessgeraet); it is said that with this instrument measurements previously impossible can be made. Furthermore, the factory produces gauge blocks and a new-type profile-lapping machine. The factory exports to Eastern bloc countries.

The Aldo Precision Instrument Plant, Dresden, produces scientific instruments, especially microscopes. Up to April 1950, this plant was privately owned. Then it was financially ruined by exaggerated demands for back taxes, causing its manager Dr von Dosky to flee to West Germany. The plant is now under trusteeship administration.

The Babelsberg Optical Workshops have developed a new type of capillary-microendoscope (an apparatus for reflecting the smallest blood vessels). The instrument magnifies 60 times and can be lighted from the top with an incandescent lamp; with attachments, ultraviolet light can also be used. The apparatus is completely watertight.

The Rathenow Optical Plant has developed a so-called "built-up microscope" (Aufbaumikroskop), which, with the use of basic parts, can be built up from a simple to a highly efficient microscope. The Rathenow plant also produces simple microscopes which magnify 600 times (sales price 327 Deutsche marks, East) and self-illuminated research microscopes (sales price 1,100 Deutsche marks, East). It also produces eyeglass frames and lenses. Production of opera glasses has been started, and work is being carried out in the field of motion picture apparatus. At present, new "people's binoculars" are being developed. A serious problem at the Rathenow Plant is the lack of skilled workers; in some departments of the plant only 20 percent of the workers are skilled, which has an unfavorable effect on the quality of the products. The manager blames the loss of workers on the lack of housing. The plant is to be expanded by additional construction.

In Wismar, an apparatus has been developed which can be used to determine the moisture content of wood to be used for shipbuilding.

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